

# W6IFE San Bernardino Microwave Society Newsletter

---

## W6IFE Newsletter

President Dick Bremer, **WB6DNX** 1664 Holly St. Brea, CA 92621--714-529-2800 --rabremer@juno.com

VP Ken Halford, **WB6DTA** 2901 Joaquin Dr. Burbank, CA 91504 --818-848-9059

Recording Sec Dick Kolbly **K6HIJ** 26335 Community Barstow, CA 92311--760-253-2477 --  
rkolbly@compuserve.com

Corresponding Sec Larry Johnston, **K6HLH** 16611 E. Valeport Ave Lancaster, CA --805-264- 4110 --  
ljohns@qnet.com

Treasurer Dick Kolbly **K6HIJ** 26335 Community Barstow, CA 92311 --760-253-2477 --  
rkolbly@compuserve.com

Editor Bill Burns **WA6QYR** 247 Rebel Rd Ridgecrest, CA 93555 760-375-8566--bburns@ridgecrest.ca.us

ARRL Interface Frank Kelly **WB6CWN** 1111 Rancho Conejo Blvd. #501 Newbury Park, CA 91320 --805-499-  
8047--fk@event1.com

FCC Interface Dave Laag **K6OW** 11614 Indian St. Moreno Valley, CA 92557 --909-924-1517

**W6IFE** License Trustee Ed Munn **W6OYJ** 6255 Radcliffe Dr. San Diego, CA--92122 619-453-4563--  
edmunnn@compuserve.com

---

The 7 **January 1999** meeting of the SBMS will have Dave, WA6CGR tell us about the design and construction of his frequency locked SSB 24 GHz rig. The SBMS meets at the American Legion Hall 1024 Main Street (south of the 91 freeway in Corona, CA at 1900 hours local time on the first Thursday of each month..

Last Meeting- Dick, K6HIJ presented a talk about the radar range equation (mono and bistatic cases)(see enclosed) , and as Dick pointed out these are the equations that one can use to figure out the potential of hearing one's own echoes off the moon (EME) (monostatic) or if two stations can make contact via bounce off of some intermediary object be it mountain or moon. Most microwave contacts are either direct (line of sight or in some cases ocean or tropo ducting) or a knife-edge diffraction over a sharp mountain ridge. Several members have had the experience of having a long tropo path through which flies an aircraft or meteor to enhance the signal conditions for a moment, allowing exchange of information. This is an example of the bistatic equation working. Dick provided monostatic target reflection data in his talk. Bistatic reflection data on some shapes is available in the literature. It suspected that more data exists but classified by the military. Thanks Dick. SBMS received a 25 year certificate from ARRL for being an affiliate member. Dick, WB6DNX indicated that he had found a website with data about the experiments of a JC Bose who conducted millimeter (up to 60 GHz) microwave experiments back in 1890. Check out [www.tuc.nrao.edu/~demerson/bose/bose.html](http://www.tuc.nrao.edu/~demerson/bose/bose.html). And we cry when we don't have a super counter to measure our frequency!!! It was voted to move the meeting time from 7:30 to 7:00 since there has been good attendance at the earlier time for a few months. This allows the discussions and tech talks to get over earlier and members to get home for bed. Doug, K6JEY challenged the membership to get on 47 GHz. Doug had some gunn parts at the meeting and indicated there are sources for parts. there are several European stations on

as well as 3 in the northern CA/OR area. Some instrumentation is also available. Contact Doug---. or see the DB9NT website. 27 members present.

The Winter SBMS Social will be held in Ridgecrest (DM15dp) this year. Bill, WA6QYR and Chuck, WA6EXV will be setting it up at a local restaurant. Planned is a visit to Chuck's lab/ machine shop/ antenna range/ EME facilities from noon to 5 p.m. Then collect at the restaurant and plan to eat at 6 p.m. This allows plenty of time for discussion, etc. and gets everyone home by a reasonable time. This is a family type event, so bring the spouse/friend/significant other/kids and enjoy the high desert. Ridgecrest is some 3 hours north of Corona. Travel can be accomplished by either traveling north on 215/15 highways to 395 and north on 395 to Inyokern (178) or by highway 14 north to Inyokern (178). Going east on 178 will bring you to Chuck's QTH in Butter Milk Areas and on to Ridgecrest. A local wide-area repeater is the 147.00+ 107 pl. or a 447.025- 123 pl.---- machines for those needing voice reassurances. Plan on warm day followed by cold night. More next month as details and maps fall into place.

Scheduling-

Feb. 4 George, K6MBL TBD

Feb. 27 Winter SBMS Social in Ridgecrest, CA (see notes above).

Mar 4 Chuck WA6EXV TBD

Wants and GOTS (for sale)

For Sale- Kenwood TH-21AT small 2 mtr handheld (5"x2.5"x1.2") 150 mw lo pwr, 1.7w hi pwr, wall charger, DC-21 car pwr supply-\$50; Honeywell Rediline motor-gen 12v in 120vac 60 Hz sine out 500w \$60. Bill WA6QYR 760-375-8566 bburns@ridgenet.net.

Need a 2kv 1/2a plate transformer Doug, K6JEY 572-424-3737.

Need a WR-42 waveguide switch Dave WA6CGR 909-612-5888.

Elmers- To help you get on the microwave bands, the following SBMS members are willing to assist you in assembly, test of equipment and mentoring as necessary:

Ken Halford, WB6DTA elmer group meets 3rd wed of the month 6:00 to 10:00 p.m. at 2901 Joaquin Burbank, CA 91504 818-848-9059.

Joe Saddler, WA6PAZ elmer group meets the last Saturday of each month following the TRW swap meet at 13909 Fidler in Bellflower, CA. Phone 714-704-7937 or 562-867-3294 to confirm a couple of days in advance.

Dave WA6CGR in Diamond Bar 909-612-5888 wa6cgr@ham-radio.com.

Dave Laag, K6OW in Moreno Valley, CA at 11614 Indian St. 909-924-1517.

Dick Bremer, WB6DNX in Brea at 1664 Holly 714-529-2800 rabremer@juno.com.

Al Johnson, K6LJM (ATV) in Running Springs, CA 909-867-7511 k6ljm@inreach.com.

Dick Kolbly, K6HIJ 26335 Community in Barstow, CA 760-253-2477 rkolbly@compuserve.com.

Chuck Swedblom, WA6EXV in Ridgecrest, CA 760-377-4972 chuckswed@juno.com.

Bill Burns, WA6QYR in Ridgecrest, CA 760-375-8566 bburns@ridgenet.net.

Activities reported at the 3 December SBMS meeting- Dick, WB6DNX is cleaning and fixing stuff; Dave, WA6CGR helped Mel, WA6JBD get a MACOM unit on the air and Dave brought in some 2304 surface mount mixers (+17 LO) to pass out [Bill, WA6QYR will be adding them to the SBMS parts collection for the members]; Larry, K6HLH went through the frustration of putting a box around his 3 GHz Downeast no tune transverter and worked 10 states on 2 mtr meteor propagation; Gene, WA6YOJ is cleaning up after moving; Mel, WA6JBD is still building IF radios for 24 and 10 GHz transverters; Doug, K6JEY is putting some old tube gear back on the air; Bob, W6SYA and Ken WA6DTA have been finishing 24 GHz dishes and made some contacts; Bill, WA6QYR has been working on VLF equipment and had hernia surgery; Chuck, WA6EXV has built a chaparral feed for 24 GHz to use with the Primestar dish, and is into final packaging of the 50w klystron amplifier for 10 GHz.



Off The Web-- I was (still am) recovering from a bad shoulder sprain three weeks ago. They have me on Physical therapy twice a week but that is better than the earlier possibility of surgery. It is gradually getting better but I am avoiding the lifting of car batteries, Macom antennas, etc. Last week an Arthrogram xray showed that the rotator cuff was not torn, so I am applying for a relief job with the Padres next year. Kerry Banke passed this along: It is a spectrum analyzer software program to use with sound boards. Supposed to be especially set up for amateur radio purposes. I have not tried it yet. Download "Spectrogram version 4.2.6.4 " at <http://home.swipnet.se/~w~41522/>. The latest (non-amateur ?) version is 4.2.7 available at <http://www.monumental.com/rshorne/gram.html>. 73s and Seasons Greetings from Ed, W6OYJ >>>

Hi Bill,-I've checked the SBMS web page from time-to-time and occasionally post to the reflector. Since 1996, I've re-activated my ham interests and currently working on EME stations for 144 & 1296. I purchased an FT-847 in June so am QRV for HF-50-144-432. I have two dishes: a 2.5m az-el mounted inside a radome which currently is set up for 4.2 GHz using surplus TVRO stuff. I plan to add 2304/2401 and 10368/10451. The dish is plumbed with wr-90 as it was a Ku-VSAT system for satellite rx on 2401. Attended Microwave Update this year and won a dual 10 GHz mixer, so looking at putting together something using it (also picked up a 11.5 GHz DRO). And still have two Gunnplexers from SBMS purchase in the 70's. Second dish is 5m aluminum surplus TVRO type (still in my barn awaiting installation hopefully this summer). Plan to use it for 432/1296 EME and 1420 radio astronomy. I have a SSB xvtr and a TH-328 cavity (700w) for 1296, already. So 1296 will be my first effort using this dish. I'm currently member of Amsat, SETI League, and SARA (Soc. of Amateur Radio Astronomers. Best of Holiday wishes to everyone from snowy (18 inches to date) South-central Alaska. 73, Ed Cole, AL7EB@ptialaska.net (former SBMS member) 50-144-432-1296---2.4 & 10.4 GHz soon! ARRL-AMSAT\*-SETI\*-SARA---\*Alaska Coordinator P.O. Box 867 Nikiski, AK 99635

TomWA1MBA---New 120 GHz Record by Will Jensby, W0EOM The previous record on 120 GHz was 0.7 miles set in July, 1994 by WA1MBA and WB2BYW. They also hold the 144 GHz record of 2.3 miles. Bob Johnson,

KF6KVG, and I have been working for the past six months on gear for 120 and 144 GHz. Both systems are based on Hughes harmonic mixers and 9 in. Cassegrain feed dishes. I use a separate for transmit, Bob uses the harmonic mixer as a transmitter with a change of bias on the diode. On Oct. 2nd, a one-way contact, at a distance of 2.9 miles, was made on 144 GHz. Bob could hear me, but his transmit power was lower, and no two-way was made. The sets were modified for 120 GHz, and on Nov. 16th a short-range test was made near Sandhill Road and i-280. this allowed use to calibrate our receivers and bore-sight our antennas. Bob then moved north to the Canada College parking lot where we soon made contact at 2.9 mi. Information was exchanged by slow-speed CW. Bob then moved further north where 2-way contact was again made. This was a distance of 3.3 miles (5.3 km), a new US record. For the future, revisit 144 GHz and up-grade our 47 GHz rigs. Will Jensby 12/3/98

73's Bill